

WHAT IS CLAIMED IS:

5 1. A damper mechanism comprising:

a first rotary member;

a second rotary member being configured to rotate relative to said first rotary

5 member;

a damper section being configured to couple elastically said first rotary member and said second rotary member together in a rotational direction;

a friction mechanism being configured to generate friction when said first rotary member and said second rotary member rotate relative to each other;

10 a friction suppressing mechanism being configured to prevent said friction mechanism from operating within a prescribed angular range; and

an elastic member being configured to soften the impact between members that contact each other at an end of said prescribed angular range.

15 2. The damper mechanism according to claim 1, wherein said elastic member is arranged to be compressed in the rotational direction within said prescribed angular range.

20 3. The damper mechanism according to claim 2, wherein said friction suppressing mechanism has two members aligned in the rotational direction and

said elastic member is disposed rotationally between said two members.

4. The damper mechanism according to claim 3, wherein

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said two members comprise a first plate-like member having a hole formed therein and a second member being arranged within said hole such that said second member can move in the rotational direction, and

said elastic member is arranged inside said hole in rotational alignment with
5 said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

5. A damper mechanism according to claim 4, wherein
said two members comprise a plurality of internal teeth and a plurality of
10 external teeth, said plurality of external teeth is arranged to have a rotational gap with respect to said plurality of internal teeth and

said elastic member is disposed rotationally between said internal teeth and said external teeth.

15 6. A damper mechanism according to claim 3, wherein
said two members comprise a plurality of internal teeth and a plurality of external teeth, said plurality of external teeth is arranged to have a rotational gap with respect to said plurality of internal teeth and

said elastic member is disposed rotationally between said internal teeth and
20 said external teeth.

7. The damper mechanism according to claim 1, wherein
said friction suppressing mechanism has two members aligned in the rotational
direction and
25 said elastic member is disposed rotationally between said two members.

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8. The damper mechanism according to claim 7, wherein
said two members comprise a first plate-like member having a hole formed
therein and a second member being arranged within said hole such that said second
5 member can move in the rotational direction, and
said elastic member is arranged inside said hole in rotational alignment with
said second member, said elastic member is configured to be compressed between
said second member and an edge of said hole.
- 10 9. A damper mechanism according to claim 8, wherein
said two members comprise a plurality of internal teeth and a plurality of
external teeth, said plurality of external teeth is arranged to have a rotational gap with
respect to said plurality of internal teeth and
said elastic member is disposed rotationally between said internal teeth and
15 said external teeth.
10. A damper mechanism according to claim 7, wherein
said two members comprise a plurality of internal teeth and a plurality of
external teeth, said plurality of external teeth is arranged to have a rotational gap with
20 respect to said plurality of internal teeth and
said elastic member is disposed rotationally between said internal teeth and
said external teeth.
- 25 11. A clutch disk assembly being configured to transfer torque from an
engine and dampen vibrations from a flywheel, the clutch disk assembly comprising:

an input rotary member;
an output rotary member being disposed to rotate relative to said input rotary member;

a damper mechanism having

5 a spring member being configured to couple rotationally said input rotary member and said output rotary member, and

a torsion characteristic having

a positive side corresponding to said input rotary member being twisted in a rotational drive direction with respect to said output rotary member,

10 a negative side corresponding to said input rotary member being twisted in a direction opposite said rotational drive direction with respect to said output rotary member,

a first stage, and

15 a second stage corresponding to said spring member being compressed, said second stage having a higher rigidity than said first stage, said second stage existing on both said positive side and said negative side;

20 a friction mechanism being configured to generate friction when said input rotary member and said output rotary member rotate relative to each other within said second stage and said spring member exerts an elastic force;

a friction suppressing mechanism being configured to secure a rotational gap in said second stage, said friction suppressing mechanism being configured to prevent said elastic force of said spring member from acting on said friction mechanism

25 within a prescribed angular range; and

an elastic member being configured to soften the impact between members that contact each other at an end of said prescribed angular range.

12. The clutch disk assembly according to claim 11, wherein said elastic member is arranged to be compressed in the rotational direction within said prescribed angular range.

13. The clutch disk assembly according to claim 12, wherein said friction suppressing mechanism has two members aligned in the rotational direction and said elastic member is disposed rotationally between said two members.

14. The clutch disk assembly according to claim 13, wherein said two members comprise a first plate-like member having a hole formed therein, said first plate-like member is arranged axially adjacent said input rotary member, and a second member being arranged within said hole such that said second member can move in the rotational direction relative to said first plate-like member, and

said elastic member is arranged inside said hole in rotational alignment with said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

15. The clutch disk assembly according to claim 14, wherein said input rotary member comprises a plurality of internal teeth and said output rotary member comprises a plurality of external teeth, said plurality of external

teeth is arranged to have a rotational gap with respect to said plurality of internal teeth
and

said elastic member is disposed rotationally between said internal teeth and
said external teeth.

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16. The clutch disk assembly according to claim 13, wherein
said input rotary member comprises a plurality of internal teeth and said
output rotary member comprises a plurality of external teeth, said plurality of external
teeth is arranged to have a rotational gap with respect to said plurality of internal teeth
and

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said elastic member is disposed rotationally between said internal teeth and
said external teeth.

17. The clutch disk assembly according to claim 11, wherein
said friction suppressing mechanism has two members aligned in the rotational
direction and

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said elastic member is disposed rotationally between said two members.

18. The clutch disk assembly according to claim 17, wherein
said two members comprise a first plate-like member having a hole formed
therein, said first plate-like member is arranged axially adjacent said input rotary
member, and a second member being arranged within said hole such that said second
member can move in the rotational direction relative to said first plate-like member,
and

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said elastic member is arranged inside said hole in rotational alignment with said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

5 19. A clutch disk assembly according to claim 18, wherein
said input rotary member comprises a plurality of internal teeth and said
output rotary member comprises a plurality of external teeth, said plurality of external
teeth is arranged to have a rotational gap with respect to said plurality of internal teeth
and

10 said elastic member is disposed rotationally between said internal teeth and
said external teeth.

20. A clutch disk assembly according to claim 17, wherein
said input rotary member comprises a plurality of internal teeth and said
15 output rotary member comprises a plurality of external teeth, said plurality of external
teeth is arranged to have a rotational gap with respect to said plurality of internal teeth
and

20 said elastic member is disposed rotationally between said internal teeth and
said external teeth.

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